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As I see

THE ART OF FORECASTING

ATTEMPTING to predict the future is one of the oldest of the professions. No civilization yet discovered is too ancient to have antedated the astrologer or the prophet. In the earliest days of ancient Egypt he was a man of influence and wealth. Among the ancient Hebrews he was generally a leader of the people. Among the Romans each course of action was presented to the seer or soothsayer to find out whether the omens were propitious for the venture. During the early period much of the background of this profession partook of either religion or magic. Since the future was in the hands of the gods, only a person with supernatural ability could wrangle out a forecast from the hidden powers.

Even after seven thousand years of recorded civilization much of the forecasting done today partakes of the same elements. The methods of the average fortune teller today are probably very similar to the methods employed centuries ago. The astrologer quite frequently decks his work with the external trappings of astronomy but in essence the astrologers who superintended the construction of the pyramids in Egypt or the pyramids of the Aztecs were more scientific.

As nearly as can be estimated the people of the United States are spending close to \$200 million a year on fortune tellers in an effort to pierce the dense clouds that surround the present, with the result expressed in modern aviation terms of "visibility zero." Forecasting has kept its place during the past few thousand years, not because of the accuracy of its predictions, but because of its practical necessity. The attempt to forecast is understandable as all human action must necessarily be based on certain assumptions about the future. This runs from the simpler problems of the tall, dark and handsome man to the more complex decisions as to whether it is advisable to increase or decrease inventory. Every time a mortgage banker makes a loan on real estate he is forecasting, as he must evidently believe that business conditions will be such that the loan can be paid off and that real estate prices in the future will maintain themselves on a high enough level so that if he should have to foreclose to safeguard his loan, the value of the real estate at that time would be above the amount he has ventured on the deal.

It has been only in recent times, however, that more or less scientific methods of predicting the future have been evolved. Certain physical phenomena can now be predicted with mathematical accuracy. The centuries of exact astronomical observation have enabled astronomy to become an exact science. Weather forecasting is still an inexact science but it has progressed to the point that both governments and airlines are spending millions of dollars in scientific departments, predicting the

weather with fairly reasonable accuracy for periods varying from a few hours to a few weeks in the future.

The only basis for the scientific forecasting of economic data lies in the fact that we are living in a logical world and that everything which happens, happens because of some combination of preceding causes. Nothing happens spontaneously - not even spontaneous combustion; even spontaneous combustion is the result of certain chemical reactions which are predictable.

The great difficulty in economic predictions is that the causes bringing about the effects forecasted are innumerable and, as any student of higher mathematics realizes, the larger the number of variables, the more difficult it is with present calculating methods to arrive at a mathematical result. About the best that can be done is to reduce to measurement as many positive factors as possible, with estimates of the various known causes on which figures cannot be secured.

Fortunately for the investor in real estate, investments in land and buildings follow a slow, long cycle. The day-to-day fluctuations or even the month-to-month fluctuations are generally rather slight, but the fluctuations over a period of years are quite marked. While scientific forecasting in the real estate field is still a new science with the possibility of error that any new science contains, the gradual accumulation of factual data is rapidly increasing the accuracy of the forecasts. While there is naturally a great deal which we do not yet know about real estate fluctuations and their causes, we have definitely proved a number of facts. I think probably one of the most interesting and usable of these facts would be that over the long period the values of existing properties will fluctuate pretty nearly with the fluctuations in replacement cost. We have charted the relationship, for instance, between residential rents and replacement cost from 1850 to the present, and have attempted to do the same thing on the selling prices of certain types of real estate over the same period. The curves look almost identical, the only wide discrepancies coming in periods of extreme shortages of housing units or periods of extreme oversupply. In periods of that sort for a while selling prices will go either above or below what would ordinarily be expected from replacement cost.

Another very interesting study which seems to me to be of considerable value in forecasting the future is the relationship between the amount of new building and certain other real estate factors. In 1933, while acting as a special economic consultant to the government, I was asked to write a report on why new building had stopped. I pointed out at that time, and accompanied my discussion with charts, that new building depended almost entirely on what I called the "incentive" and I charted a line as an incentive line which was based on the relationship of the values of existing buildings to the cost of building those buildings new. If existing buildings were selling below their cost of replacement less a reasonable depreciation, there was very little chance of stimulating any volume of building. If, on the other hand, existing buildings were selling at a high price after depreciation in relationship to new buildings, then a building boom could be expected.

Further study of this material showed that a number of other factors could be worked into the formula in order to make it slightly more accurate. These factors included such things as the foreclosure rate, because it was found that when foreclosures were high a great deal of property was being thrown on an indifferent

market and that this had the effect of depressing prices still further and of also discouraging the new financing necessary to take care of any building boom. One of the other factors which was significant was the interest rate. In the last analysis it is not so much the relationship of the cost of new building to the values of buildings already built, but it is rather the monthly cost of ownership of the new units that should be built to take care of the demand. It was partially as a result of this study that methods were discussed for reducing interest rates and one of the results of these discussions was the organization of the FHA. By reducing interest rates the FHA during the period of the late thirties increased the volume of construction considerably above what it would otherwise have been. These studies which I made sixteen years ago indicate to me at this time that unless construction costs fall faster than the drop in the selling prices of existing buildings, the volume of new building will continue to fall off, and I think this a reasonable assumption for the present.

At the same time that many of these studies were being made of factors which influence new building, real estate prices and other real estate factors such as rents, real estate transfers, etc., were charted, year by year, for many of the principal cities of the United States. St. Louis was the first city thus charted. It was found that certain peaks and valleys occurred, and that in St. Louis apparently these peaks and valleys had occurred at long intervals. One of the peaks was in the early 1900's and this peak was explained in our early reports as being caused by the St. Louis World's Fair which was held in 1904. The next great peak started in the early twenties, and this was explained in our reports as the reaction from the lack of building during the First World War period. The depression of the thirties was explained as a natural reaction from the over-building which took place in the twenties. A short time after getting the figures on St. Louis, however, we secured the figures on Los Angeles, San Francisco, Boston and a number of other cities. The peaks and valleys we had found in St. Louis we also found in the other cities and we started to doubt that the St. Louis World's Fair had caused a national boom in the early 1900's. Apparently some forces operating more nearly on a national basis had been responsible.

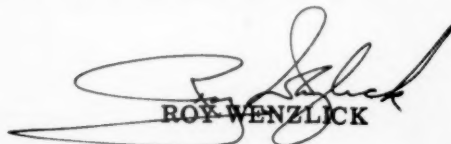
Real estate activity, by which we mean the relationship of the number of voluntary transfers of real estate to the number of families in the principal cities, has shown a marked tendency when a trend is once established to continue roughly along the same trend for a long period of years, regardless of whether the trend is down or up. This is quite apparent on the long chart published by this company. Real estate activity hit a peak in 1853 and showed a constantly declining trend with only a minor interruption until the end of 1861. The trend then turned upward and continued upward without serious interruption until the latter part of 1866. For about 4 years then the movement was more or less sideways with a continuation of the upward trend resumed in 1870. The peak was reached in 1872 and a downward trend followed, interrupted for less than 6 months in 1873. This downward trend then continued without serious interruptions until the latter part of 1878. At that time the trend turned and continued up until the spring of 1882. Its course then was largely sideways for a period of 4 years followed by a rapid resumption of the upward trend in 1887 and 1888. In 1889 the trend again turned downward and without serious reversal continued until the latter part of 1894. It then moved sideways for about one year and then continued downward with only minor interruptions until the end of 1898, at which time the trend turned up, and without any serious interruption it continued until the spring of 1906. At that time the trend was reversed and with only minor interrup-

tions continued down until the spring of 1915, moved up slightly for two years and then resumed the downward movement, hitting the lowest point in the latter part of 1918. This was another reversal point with a rapidly increasing volume of real estate transfers during 1919 and until the spring of 1920. A rather serious reversal then took place during the depression of 1920 and 1921, but by the beginning of 1922 the former upward trend of real estate activity was again continued and, with only one interruption, remained up until the fall of 1925. From that time until the fall of 1933 the trend was definitely and consistently down. By 1934, however, the trend had turned up and worked constantly higher until the middle of 1937. After being interrupted for about a year it continued its upward movement until the United States entered the war at the end of 1941. This caused a reversal of the upward movement for about 13 months, but starting at the beginning of 1943 the upward trend was resumed and moved up rapidly until the spring of 1946, reaching at that time the highest point ever attained in real estate activity. The trend then turned down and, with only minor interruptions, has continued downward to the present time.

While, of course, anything is possible, it seems to me that the most probable movement for real estate activity will be a continuation of this downward trend, as it certainly does not appear at the present time that the cycle is complete. In accordance with past experience there is a possibility that as we reach the normal line a sideways movement might take place for a period of anywhere from one to three or four years, followed by a continuation of the downward trend. If this pattern is correct, we could be expected to hit the lowest point of real estate activity some time around the middle fifties.

The theory of momentum also applies to the fluctuations of the foreclosure rate. A study of our long chart from 1870 to the present will show that generally an increase in foreclosures for as much as two years is a fairly certain indication that foreclosures will go considerably higher and that a long period of years will elapse before they sink to negligible levels. Also, when they start to drop if the drop continues for as much as two years, it seems to be a fairly certain indication that the drop will continue for a long period, bringing foreclosures back to a negligible level. As yet there is no perceptible rise in the foreclosure rate.

When our organization started accumulating data on urban real estate in 1928 it was, insofar as we know, the first private organization in the world to undertake this type of real estate research. In the 21 years that have elapsed since then we have accumulated vast amounts of information in an attempt to reduce rough and inaccurate descriptive terms to quantitative measures. We have been primarily interested in studying fluctuations in the past, and in answers to the questions of "how much?" "how long?" and "why?" The field is so large, however, that sometimes we feel we have only scratched the surface, but we have considerable confidence in research techniques and in the cumulative value of measured data. It seems to me that real estate forecasting should constantly become more accurate and reliable.



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